PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P456218 MDA	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
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Applicant   COMPUDIGM INTERNATIONAL LIMITED et al

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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 11 sheet(s).

3. This report contains indications relating to the following items:

I	[X]	Basis of the report
II	[ ]	Priority
III	[ ]	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	[ ]	Lack of unity of invention
V	[X]	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	[ ]	Certain documents cited
VII	[ ]	Certain defects in the international application
VIII	[ ]	Certain observations on the international application

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Date of submission of the demand 19 August 2002	Date of completion of the report 10 April 2003
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V.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		

1. Statement

Novelty (N)	Claims	1-44	**YES**
	Claims		**NO**
Inventive step (IS)	Claims	1-44	**YES**
	Claims		**NO**
Industrial applicability (IA)	Claims	1-44	**YES**
	Claims		**NO**

2. Citations and explanations (Rule 70.7)

   <u>Novelty, Inventive Step (Yes) Claims 1-44</u>

   US 5347452 A (Bay, Jr.) 13 September 1994

   WO 92/12488 A1 (Teknekron Software Systems, Inc.) 23 July 1992

   No citation or obvious combination of citations discloses the display of desired transactions in a graphical representation along with past transactions, consequently the claims are novel, have an inventive step and are industrially applicable.

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certain volume of particular stocks at a minimum price or better by a certain time. Likewise, the order book could contain instructions to purchase a certain volume of stocks at a certain price or less by a certain time. It is necessary for a trader to constantly check the order book to make sure that orders are being fulfilled and to check price movements of

5   individual stocks relevant to the order book. Many systems currently on the market maintain an order book as a separate application to the main trading display which tends to be inconvenient for a trader.

It would be particularly advantageous to provide a trader with a trading data visualisation

10   system which provides all the necessary data in a graphical format to assist traders in stock selection and in carrying out instructions in an order book.

SUMMARY OF INVENTION

15   In one form the invention comprises a trading data visualisation system comprising a transaction database stored in computer memory of transaction data representing transactions and desired transactions in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value; a retrieval component

20   configured to retrieve transaction data from the transaction database; and a display configured to display one or more graphical representations of some or all of the transaction data including at least one desired transaction, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

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In another form the invention comprises a method of visualising trading data comprising the steps of maintaining in computer memory a transaction database of transaction data representing offers for sale, offers to buy and concluded sales in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the

30   data sets comprising an item identifier, a transaction identifier and an item volume value;

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retrieving transaction data from the transaction database; and displaying one or more graphical representations of some or all of the transaction data including at least one offer for sale or offer to buy, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

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BRIEF DESCRIPTION OF THE FIGURES

Preferred forms of the trading data visualisation system and method will now be described with reference to the accompanying figures in which:

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Figure 1 shows a block diagram of a system in which one form of the invention may be implemented;

Figure 2 shows the preferred system architecture of hardware in which the present 15 invention may be implemented;

Figure 3 shows one preferred form display of a trading stock in accordance with the invention;

20 Figure 4 shows an order book generated in accordance with the invention;

Figure 5 shows a combined trading stock display and order book; and

Figure 6 shows the combined display of Figure 5 generated for several stocks.

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trader is behind target, the proportion of the total order by which the trader is behind is preferably indicated in a darker colour to draw a trader's attention to the deficiency.

An important feature of the invention, as shown in Figure 5, is in displaying a graphical
5   representation 310 of one or more transactions and displaying data 320 from the order book together. As shown in Figure 5, individual transactions involving a particular stock are displayed in the same manner described with reference to Figure 3. Positioned beneath the transaction representations could be an order book for a trader involving that stock in a similar manner to that described above with reference to Figure 4. In this way graphical
10   representations of both actual transactions and desired transactions in relation to one or more tradable items are displayed.

The order book in Figure 5 contains an order to sell 1.5 million units of Rio stock at a price of $29.15 or better by a time of 2.00pm. As shown in Figure 5, this particular trader is
15   running behind schedule as indicated by area 322. A target price bracket indicated at 330 could be positioned at a y position in the display corresponding to the minimum price for sale of the stock. In this way, a trader is immediately provided with an indication of the stock immediately available at the target price or better. All the trader needs to do is scan the bids and asks above the target price bracket 330 for the best bid.

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Referring to Figure 6, the invention could also provide a display 400 to a user on client 20 involving more than one type of stock. The representation 400 preferably includes a focus window 410 showing in detail one of the stocks under consideration. Positioned adjacent the focus window 410 is preferably a thumb nail window 420 showing a series of smaller
25   representations of stocks and order books. The thumb nail window 420 represents context across all stocks of interest, including for example the order book or watch list. Although the representations are smaller, significant elements of the visualisations are represented as the most striking using the techniques described above giving indications of market depth, spread, price, trends, urgent orders and opportunities and threats. In this way, the user can

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CLAIMS

1.   A trading data visualisation system comprising:

a transaction database stored in computer memory of transaction data representing transactions and desired transactions in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;

a retrieval component configured to retrieve transaction data from the transaction database; and

a display configured to display one or more graphical representations of some or all of the transaction data including at least one desired transaction, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

2.   A trading data visualisation system as claimed in claim 1 wherein one or more of the data sets includes a time value.

3.   A trading data visualisation system as claimed in claim 2 wherein one or more of the graphical representations has a colour property based on the time value in each data set.

4.   A trading data visualisation as claimed in claim 2 or claim 3 wherein the display is configured to display two or more graphical representations of some or all of the transaction data, the graphical representations positioned relative to the other graphical representation(s) based on the time value in each data set.

5.   A trading data visualisation system as claimed in any one of the preceding claims wherein one or more of the graphical representations has a colour property based on the transaction identifier in each data set.

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6.   A trading data visualisation system as claimed in any one of the preceding claims wherein one or more of the data sets includes a currency value.

7.   A trading data visualisation system as claimed in claim 6 wherein the display is configured to display two or more graphical representations, each graphical representation positioned relative to the other graphical representation(s) based on the currency value in each data set.

8.   A trading data visualisation system as claimed in any one of the preceding claims wherein the display is configured to display two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the transaction identifier in each data set.

9.   A method of visualising trading data comprising the steps of:
        maintaining in computer memory a transaction database of transaction data representing offers for sale, offers to buy and concluded sales in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;
        retrieving transaction data from the transaction database; and
        displaying one or more graphical representations of some or all of the transaction data including at least one offer for sale or offer to buy, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

10.   A method of visualising trading data as claimed in claim 9 wherein one or more of the data sets includes a time value.

11.   A method of visualising trading data as claimed in claim 10 further comprising the step of displaying one or more of the graphical representations with a colour property based on the time value in each data set.

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12.   A method of visualising trading data as claimed in claim 10 or claim 11 further comprising the step of displaying two or more graphical representations of some or all of the transaction data, the graphical representations positioned relative to the other graphical

5   representation(s) based on the time value in each data set.

13.   A method of visualising trading data as claimed in any one of claims 9 to 12 further comprising the step of displaying one or more graphical representations with a colour property based on the transaction identifier in each data set.

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14.   A method of visualising trading data as claimed in any one of claims 9 to 13 wherein one or more of the data sets includes a currency value.

15.   A method of visualising trading data as claimed in claim 14 further comprising the

15   step of displaying two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the currency value in each data set.

16.   A method of visualising trading data as claimed in any one of claims 9 to 15 further

20   comprising the step of displaying two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the transaction identifier in each data set.

17.   A trading data visualisation system comprising:

25   a transaction database stored in computer memory of transaction data representing transactions and desired transactions in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;

          a retrieval component configured to retrieve transaction data from the transaction

30   database; and

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a display configured to display one or more graphical representations of some or all of the transaction data including at least one desired transaction, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

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18.   A trading data visualisation system as claimed in claim 17 wherein one or more of the data sets includes a time value and/or a currency value.

19.   A trading data visualisation system as claimed in claim 18 wherein one or more of
10   the graphical representations has a colour property based on the time value and/or currency value in each data set.

20.   A trading data visualisation system as claimed in claim 18 or claim 19 wherein the display is configured to display two or more graphical representations, the graphical
15   representations positioned relative to the other graphical representation(s) based on the time value and/or currency value in each data set.

21.   A trading data visualisation system as claimed in any one of claims 17 to 20 wherein one or more of the graphical representations has a colour property based on the
20   transaction identifier in each data set.

22.   A trading data visualisation system as claimed in any one of claims 17 to 21 wherein the display is configured to display two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based
25   on the transaction identifier in each data set.

23.   A method of visualising trading data comprising the steps of:
          maintaining in computer memory a transaction database of transaction data representing offers for sale, offers to buy and concluded sales in relation to one or more

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tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;

retrieving transaction data from the transaction database; and

displaying one or more graphical representations of some or all of the transaction data

5   including at least one offer for sale or offer to buy, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

24.   A method of visualising trading data as claimed in claim 23 wherein one or more of

10   the data sets includes a time value and/or a currency value.

25.   A method of visualising trading data as claimed in claim 23 or claim 24 further comprising the step of displaying one or more of the graphical representations with a colour property based on the time value and/or currency value in each data set

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26.   A method of visualising trading data as claimed in claim 24 or claim 25 further comprising the step of displaying two or more graphical representations of some or all of the transaction data, the graphical representations positioned relative to the other graphical representation(s) based on the time value and/or currency value in each data set.

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27.   A method of visualising trading data as claimed in any one of claims 23 to 26 further comprising the step of displaying one or more graphical representations with a colour property based on the transaction identifier in each data set.

25   28.   A method of visualising trading data as claimed in any one of claims 23 to 27 further comprising the step of displaying two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the transaction identifier in each data set.

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29.   A trading data visualisation system comprising:

a transaction database stored in computer memory of transaction data representing transactions and desired transactions in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;

a retrieval component configured to retrieve transaction data from the transaction database; and

a display configured to display one or more graphical representations of some or all of the transaction data including at least one desired transaction, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

30.   A trading data visualisation system as claimed in claim 29 wherein one or more of the data sets includes a time value.

31.   A trading data visualisation system as claimed in claim 30 wherein one or more of the graphical representations has a colour property based on the time value in each data set.

32.   A trading data visualisation system as claimed in claim 30 wherein the display is configured to display two or more graphical representations of some or all of the transaction data, the graphical representations positioned relative to the other graphical representation(s) based on the time value in each data set.

33.   A trading data visualisation system as claimed in claim 29 wherein one or more of the data sets includes a currency value.

34.   A trading data visualisation system as claimed in claim 33 wherein the display is configured to display two or more graphical representations, each graphical representation

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positioned relative to the other graphical representation(s) based on the currency value in each data set.

35.   A trading data visualisation system as claimed in claim 29 wherein one or more of the graphical representations has a colour property based on the transaction identifier in each data set.

36.   A trading data visualisation system as claimed in claim 29 wherein the display is configured to display two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the transaction identifier in each data set.

37.   A method of visualising trading data comprising the steps of:

maintaining in computer memory a transaction database of transaction data representing offers for sale, offers to buy and concluded sales in relation to one or more tradable items, the transaction data comprising one or more data sets, one or more of the data sets comprising an item identifier, a transaction identifier and an item volume value;

retrieving transaction data from the transaction database; and

displaying one or more graphical representations of some or all of the transaction data including at least one offer for sale or offer to buy, the size of one or more of the graphical representations proportional to the volume of tradable items represented by the transaction data.

38.   A method of visualising trading data as claimed in claim 37 wherein one or more of the data sets includes a time value.

39.   A method of visualising trading data as claimed in claim 38 further comprising the step of displaying one or more of the graphical representations with a colour property based on the time value in each data set.

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40.   A method of visualising trading data as claimed in claim 38 further comprising the step of displaying two or more graphical representations of some or all of the transaction data, each graphical representation positioned relative to the other graphical representation(s) based on the time value in each data set.

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41.   A method of visualising trading data as claimed in claim 37 wherein one or more of the data sets includes a currency value.

42.   A method of visualising trading data as claimed in claim 41 further comprising the step of displaying two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the currency value in each data set.

43.   A method of visualising trading data as claimed in claim 37 further comprising the step of displaying one or more of the graphical representations with a colour property based on the transaction identifier in each data set.

44.   A method of visualising trading data as claimed in claim 37 further comprising the step of displaying two or more graphical representations, the graphical representations positioned relative to the other graphical representation(s) based on the transaction identifier in each data set.

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